

SECTION 3

DESIGN CRITERIA

This section will identify and define the major design features for the Soldiers Pass Area. A majority of the design features are taken from ADOT who owns SR 89A. Any design features not covered in this section should follow the guidelines established by ADOT and ASSHTO Standards.

3.1 SR 89A DESIGN CRITERIA

Table 3.1 shows the major design features on SR 89A recommended for this corridor.

Table 3.1 – SR 89A Design Criteria

Description	SR 89A
Design Vehicle:	WB-50
Level of Service:	Desirable LOS 'D' @ intersections
Number of Lanes:	4 through lanes
Bicycle Provision:	5' on-street bike lane
Sidewalk Provision:	5' min. sidewalk
Parking Provision:	Not allowed on-street
Lane Widths:	12 ft through lane; 12 ft auxiliary lane or turn lanes
Signal Spacing:	¼ mile desired spacing
Roundabout Grades:	<4% desirable
Cross-slope:	2% normal crown; 4% maximum superelevation
Median:	4 ft min.; 16 ft typical
Edge Treatment:	Vertical curb & gutter

3.1.1 Design Vehicle

It is desirable that a WB-50 design vehicle be used for roadway and intersection design.

3.1.2 Number of Lanes

The Existing SR 89A corridor contains four travel lanes, and future traffic volumes do not indicate that additional lanes are needed.

3.1.3 Lane Widths

The preferred through lane width is 12 feet and the desirable turn lane width is 12 feet not including bike lane or gutter.

3.1.4 Intersection Spacing

ADOT has a desired signal intersection spacing of a quarter mile; minimum spacing is dependent upon operations and queue lengths. Roundabout minimal spacing is dependent on design, traffic volumes, and queue lengths.

3.1.5 Roundabout Design

Roundabout preliminary design will follow guidelines accepted in the industry. A desirable max grade of 4% across the intersection is included in the guidelines. A two-lane roundabout's inscribed diameter ranges from 140 feet to 170 feet.

3.1.6 Medians

Medians will be constructed with either single curb or curb and gutter. The minimum median width is recommended to be 4 feet measured from face-of-curb to face-of-curb. For alternatives where left turn bays are implemented, the minimum median width is 16 feet.

3.2 CITY STREETS DESIGN CRITERIA

Table 3.2 shows the major design features on the city streets recommended for this corridor.

Table 3.2 – City Streets Design Criteria for Study Area

Description	SR 89A
Number of Lanes:	2 through lanes
Sidewalk Provision:	5' min. sidewalk
Parking Provision:	Not allowed on-street
Lane Widths:	14 ft through lane
Design Speed:	30 mph
Cross-slope:	2% normal crown; 4% maximum superelevation
Edge Treatment:	Vertical curb & gutter

3.2.1 Design Speed

City streets that intersect with SR 89A will be designed to 30 mph. Maximum curvature and maximum grades will be held by this design speed using the AASHTO manual.

3.2.2 Number of Lanes and Lane Width

Street will be designed with one 14' minimum through lane in each direction of travel.